Amendments to the Specification:

Please replace the paragraph spanning pages 15 and 16 with the following:

Preferably, the materials for the substrate and the at least partially transparent element are selected so that the polymerized polymeric film can be easily removed. Preferably, the substrate material is sufficiently rigid to protect the polymeric structures made with the process. In an embodiment, a separate substrate is attached to an enclosing element of the reaction chamber. Useful materials for the substrate in this embodiment, include, but are not limited to sheets of thermoplastic materials such as polycarbonate, Plexiglas (PMMA), polypropylene and polystyrene . The substrate can also be formed by an enclosing element of the reaction chamber, in which case useful substrates, include, but are not limited to, metals. During fabrication of multilayer structures, a previously fabricated layer can serve [[in]] at least in part as the substrate for a layer to be deposited. If the previously formed layer is patterned, the substrate for the layer to be deposited may also be formed in part by sacrificial material used to fill voids in the previously formed layer. If the previously formed layer contains features like trenches which have not been filled with sacrificial material, the substrate for the previously formed layer may also act in part as the substrate for the material to be formed.

Please replace the first full paragraph on page 16 (starting at about line 8) with the following:

As used herein, an "at least partially transparent element" is at least partially transparent to wavelengths of light useful for the invention. In particular, the at least partially transparent element may be transparent to UV and/or visible light. Typically, the at least partially transparent element will be a partially transparent photomask. The photomask pattern may be a frame. However, in some cases it may be desirable that the at least partially transparent element be wholly transparent. The photomask may be of any type known to the art, including chrome on quartz/glass, ink on a polymer sheet,

or a dynamic mask where electrical signals change a liquid crystal display making CAD control possible. If the photomask is made of sufficiently rigid material (e.g. chrome on glass), the photomasks may form an enclosing element of the reaction chamber. The photomask may have transparent 3D features on the contact side. Preferably these features are made of materials and dimensions such that the polymeric layer can be released from the mask without destruction of the layer. The features may be formed from the photomask or be separate features attached to it. Suitable materials for forming 3D features on contact side of the photomask include but are not limited to waxes, previously formed polymeric layers, thermoplastic structures, and glass structures. Some of these materials can be glued to the photomask. If finer features than 50 microns are desired, then a chrome on glass mask may be used. The 3D features may remain on the photomask after the photomask is removed [[are]] or be transferred to the polymeric layer. For improved resolution of the pattern, the pattern side of the photomask is placed in contact with the liquid comprising the polymer precursor.

At page 19, please replace the third full paragraph (starting at about line 14) with the following:

The methods of the invention can be used to make 3D devices through assembly of multiple layers. In an embodiment, subsequent layers can be formed on each other to build up the 3D structure. In this process, cavities such as trenches, depressions or void volumes in a layer are generally filled with a sacrificial material before a subsequent layer is attached. The sacrificial layer ensures that no liquid polymer precursor can access portions of the device where a polymer would obstruct flow, etc. Any excess sacrificial material deposited onto surfaces where attachment of the subsequent layer will occur can be solvent polished before fabrication of the subsequent layer. This step can be repeated many times throughout the fabrication of the device, enabling true 3D structures regardless of the geometries of individual layers. In this process, it may be desirable that one or more of the layers is not patterned, which can

be accomplished by using a blank photomask or a photomask patterned only to provide a frame.

Please replace the paragraph spanning pages 22 and 23 with the following:

In an embodiment, the first and the second enclosing element of the chamber are substantially parallel to one another. By substantially parallel, it is meant that the first and second enclosing elements are sufficiently parallel that the thickness variation across the area of the device falls within tolerance limits. In another embodiment, the first and second enclosing element are not substantially parallel to one another, in which case the polymerized film is not uniform in thickness.

Please replace the first full paragraph of page 26 (starting at about line 3) with the following:

The apparatus for photopolymeric device fabrication was based on a photolithography system from Optical Associates, Inc., San Jose, CA. The original mask alignment system (Model 204) was equipped with micropositioners in the x, y, z, and theta directions. The opening in the mask holder of the original system was enlarged and the substrate holder (i.e., wafer chuck housing) replaced with a reaction chamber. An LVDT height measurement sensor was also added (220 in Figure 6B). The collimated flood exposure source used with the system provided 50 to 70 mW/cm^2 of 365-nm radiation.